The Dudley Group
NHS Foundation Trust

Defibrillator Implant Procedures (ICD)

Cardiology Department

Patient Information Leaflet

Introduction

You have been given this leaflet as your doctor has suggested you would benefit from having an implantable cardioverter defibrillator (also known as an ICD) This leaflet gives more information on what will happen to you before and after the procedure. It is designed to make sure that you know as much as possible about the procedure before you agree to it and sign the consent form.

What is an ICD?

An ICD is an electric device that is implanted in the chest to manage abnormal heart rhythms (arrhythmias).

An ICD is slightly bigger than a pacemaker and works differently.

An ICD constantly monitors your heart rhythm and detects any fast and dangerous heart rhythms. If a dangerous rhythm is detected the ICD sends an electrical shock or fast pacing to the heart to restore normal heart rhythm.

An ICD may also help manage slow heart rhythms by sending small electrical impulses to the heart muscle to stimulate the heart into maintaining a suitable heart rate and rhythm.

The ICD pulse generator (battery)is connected to one, two or three leads, depending on the nature of your heart condition:

- Single chamber ICD (one lead)
- Dual chamber ICD (two leads)
- Biventricular (Cardiac Resynchronisation Therapy CRT-D (three leads)
- SICD- where the lead electrode is implanted under the skin, instead of into the heart.

Most ICD batteries last between 5 to 10 years, depending on how much ICD therapy is required over the device's lifetime. The battery is checked at each follow-up check.

Implantation of the ICD system is a surgical procedure performed under local anaesthetic, with sedation, to make you feel sleepy. It usually takes one to three hours to perform.

Most procedures can be done as a day case. If there are no complications, you will be allowed to go home after three to four hours.

Why do I need an ICD?

Your doctor has identified that you are at greater risk of having a dangerous fast heart rhythm. An ICD can deliver a life-saving electric shock or fast pacing to restore a normal heart rhythm.

Some devices can also relieve some symptoms such as palpitations, dizziness, fatigue or shortness of breath.

A CRT-D device can synchronise the contraction of the chambers in your heart, and this may help to improve the symptoms of heart failure with time.

Consent

We must seek your consent for any procedure or treatment beforehand which will be a two-stage process.

Stage one will be with your doctor in a clinic setting where they will explain the risks, benefits and alternatives where relevant, before they ask for your written consent. If you are unsure about any aspect of the procedure or treatment proposed, please do not hesitate to ask for more information.

Stage two will be a re-confirmation when you attend for the procedure and will be undertaken by a healthcare professional (either physiologist or the operator)

What are the benefits of having this procedure?

- Life-saving immediate therapy
- Elimination of unpleasant symptoms such as dizziness, blackouts, and tiredness.
- Improved quality of life.

What are the risks of having this procedure?

- Bleeding from the insertion site.
- Blood collection (haematoma) at the insertion site.
- Small risk of surgical wound infection.
- An ICD implant involves a low dose of radiation, about the same as the amount of radiation you would normally get in 6 months of natural background radiation.
- Risk of a lead moving, which may need to be repositioned.
- A small risk of a collapsed lung (pneumothorax), which may need a drain to be inserted to expand the lung.
- A build-up of fluid around the heart (tamponade), which requires draining.
- Rhythm disturbances, requiring treatment.
- Pain during injection of local anaesthetic.
- Death is a rare complication of an ICD implantation.

What if I decide not to have an ICD?

If you choose not to have an ICD, you will continue to have the symptoms. Usually, there is no alternative way of treating the condition.

What preparation is needed?

On the day of the procedure:

- You must not eat for six hours before the procedure.
- You must not drink milky drinks six hours before the procedure. Clear fluids only.
- Bring all medication with you.

- Please take your normal medications, with a sip of water, on the morning of your procedure- **see the note regarding Warfarin and anticoagulation**
- Have a bath or shower
- Remove jewellery, contact lenses, make-up and nail varnish. Wedding rings can remain but will be taped for the procedure.
- Be prepared to stay overnight, pack a small bag
- Bring a book or something to do whilst you wait
- Bring reading glasses and remove contact lenses.
- Avoid bringing large sums of money or valuables
- **Please arrange for a relative or a friend to take you home after your procedure by car/taxi. You will not be able to drive home or use public transport. Your relative or friend will need to stay with you overnight.**

Medication

What to do if on Warfarin or newer anticoagulants (NOACs):

- **Stop anticoagulation** (Apixaban, Dabigatran, Edoxaban or Rivaroxaban) **48 hours before** the procedure
- **Warfarin**, please contact the day case unit 01384 456111 Ext 2573 or the Anticoagulation team Ext 2380 to discuss when to take your last dose.

Diabetes (controlled by diet or tablets)

- Do not eat at least four hours before the procedure
- You can drink clear fluids up to 2hrs before the procedure.
- If you are missing breakfast do not take your diabetes medication.
- Stop taking Metformin 48 hours before procedure and 24 hours post procedure
- Remember to bring all your diabetes medication, dextrose tablets and blood testing equipment

- If your procedure is in the afternoon, take your tablets as normal with your breakfast.
- Your blood glucose will be tested by a finger prick when you arrive and monitored

Diabetic taking insulin:

- Day before STOP SGLT2 inhibitor (dapagliflozin, empagliflozin or canagliflozin)
- Stop taking Metformin 48 hours before procedure and 24 hours post procedure
- Usually, we will try to put you first on the list. We advise you not to eat any breakfast and to omit your usual morning insulin before the procedure.
- Remember to bring all your diabetes medication, dextrose tablets and blood testing equipment
- If you are on the afternoon list, you need to take half of your morning dose of mixed insulin (minimum 10 units) with breakfast.
- If you are on insulin four times a day, please remember to take your morning dose.
- Your blood glucose will be tested by a finger prick when you arrive and monitored

What happens on the day:

- We will provide you with a gown to change into. A small canula (tube) will be inserted into a vein in your arm, this will allow us to give intravenous antibiotics
- Pre-procedure tests will include blood pressure, temperature, and ECG
- A healthcare professional will discuss your consent. Please use this opportunity to raise any concerns that you may have
- A physiologist will review the 'Living with a Defibrillator' information sheet and home monitoring

What happens during the procedure

The procedure is performed in a dedicated Xray room within the Cardiology Department. You will be cared for by a team of doctors, nurses, radiographers and cardiac physiologists.

- You will lie on an X-ray bed
- Your ECG, blood pressure and oxygen levels will be monitored throughout the procedure
- You may be given a sedative to help you relax during the procedure.
- We may give you oxygen using a face mask
- Your upper chest will be cleaned with a cold antiseptic and covered with sterile drapes. We will make a gap so you can peep out.
- After injecting the area with local anaesthetic, a small incision is made, and a pocket formed behind the skin where the ICD will sit.
- The ICD leads are inserted down one of your main veins and are guided into the heart using X-ray screening. You may experience some extra ‘bumps’ in the chest, but they will pass. The doctor and physiologist will run a series of tests on the leads.
- If you are having an SICD, the lead will be placed under the skin, without X-ray screening. Tests will be performed.
- Your incision will be closed with dissolvable stitches and a dressing applied
- You will be taken back to recover in the day case unit

What happens after the procedure?

- You will be taken back to recover in the day case unit

- Your heart rate, blood pressure and wound site will be monitored.
- A chest X-ray may be performed
- Once the sedation has worn off you may eat, drink and gently mobilise. You can have painkillers if required.

Going Home Advice

- You will be given oral antibiotics to take home
- You will be given a monitor to take home.
- You will be issued with an ICD identification card

Driving

If you hold a normal driving licence, then certain driving restrictions apply depending on the indication for your implant.

- If you have had your ICD for a sustained ventricular arrhythmia with associated incapacity, then you must **stop driving** for six months. You must **NOTIFY DVLA.**

- If you have had your ICD for prophylactic reasons, then you must **stop driving** for one month. You must **NOTIFY DVLA.**

Should the ICD subsequently **deliver tachycardia pacing and/or shock therapy for a ventricular arrhythmia** then you **must stop driving for at least six months, possibly 2 years** depending on your drug therapy.

You must NOTIFY DVLA.

If you are an HGV/PSV licence holder then you **ARE PERMANENTLY BARRED.**

Please note the DVLA review their driving regulations biannually

Wound Care

Remove the wound dressing after 48 hours. You MUST keep wound dry for the next 7-10 days to avoid infection. The stitches are dissolvable.

If an infection occurs then the site would appear red, swollen, and painful, be warm & may ooze fluid. If this happens you **MUST** phone the device clinic.

Please limit arm movement to shoulder height and avoid stretching or carrying heavy loads for at least 3 weeks post implant to reduce the risk of lead displacement.

Diabetic patients

You will be discharge when you are eating and drinking normally and your blood glucose is at a safe level.

However, if you are unwell with:

- **Continuous** vomiting /diarrhoea or high fever
- **Unable** to keep food down for 4 hours or more
- **High** blood glucose (>15mmol)
- **High** ketones (0.6mmol)

You should seek medical help. Contact your usual diabetes nurse or doctor

How to contact us:

Should you have any concerns regarding your device please contact the pacemaker clinic and not your GP.

Pacemaker Clinic/ Devices Clinic

Cardiology Department
Russells Hall Hospital

Dudley

DY1 2HQ

Tel: 01384 456111 Ext 2156

Monday- Friday 08.00 - 17:00

Cardiology Day Case Unit

Russells Hall Hospital

Dudley

DY1 2HQ

Tel: 01384 456111 Ext 2573

Wednesday & Thursday 08.00 - 20.00

Cardiology Ward

Russells Hall Hospital

Dudley

DY1 2HQ

Tel: 01384 456111 Ext 2138

Additional information:

British Heart Foundation
Tel: 0808 802 1234
www.bhf.org.uk